

## System No. W-L-2053

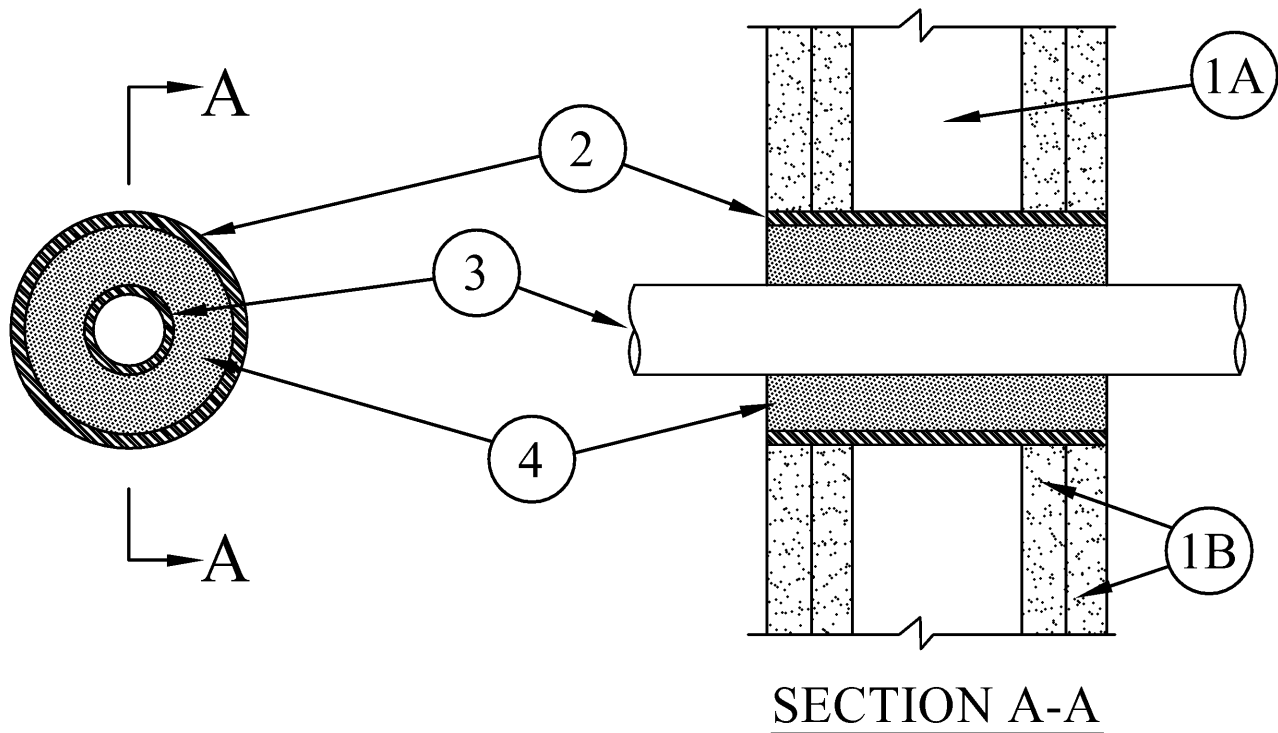
January 09, 2003

F Rating - 2 Hr

T Rating - 1-1/4 and 2 Hr (See Item No. 3)

L Rating At Ambient - Less Than 1 CFM/Sq Ft

L Rating At 400 F - 4 CFM/Sq Ft



1. WALL ASSEMBLY – THE FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
  - A. STUDS – WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC. STEEL STUDS TO BE MIN 2-1/2 IN. WIDE AND SPACED MAX 24 IN. OC.
  - B. GYPSUM BOARD\* – TWO LAYERS OF NOM 5/8 IN. THICK GYPSUM WALLBOARD, AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAX DIAM OF OPENING IS 4 IN.
2. METALLIC SLEEVE – NOM. 3 IN. DIAM. (OR SMALLER) SCHEDULE 40 STEEL PIPE CAST INTO WALL ASSEMBLY WITH JOINT COMPOUND AND INSTALLED FLUSH WITH WALL SURFACES.
3. THROUGH PENETRATIONS – ONE NONMETALLIC PIPE WITHIN THE FIRESTOP SYSTEM AND IS TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF NONMETALLIC PIPES MAY BE USED
  - A. POLYVINYL CHLORIDE (PVC) PIPE – NOM. 2 IN. DIAM. (OR SMALLER) SCHEDULE 40 PVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEM. A NOM. ANNULAR SPACE OF MIN. 3/4 IN. TO MAX. 7/8 IN. IS REQUIRED WITHIN THE FIRESTOP SYSTEM.
  - B. CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE – NOM. 2 IN. DIAM. (OR SMALLER) SDR 17 (CPVC) PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEMS. A NOM. ANNULAR SPACE OF MIN. 3/4 IN. TO MAX. 7/8 IN. IS REQUIRED WITHIN THE FIRESTOP SYSTEM.
  - C. POLYBUTYLENE (PB) PIPE – NOM. 1 IN. DIAM. (OR SMALLER) SDR11 PB PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEMS. A NOM. ANNULAR SPACE OF MIN. 3/4 IN. TO MAX. 1-1/2 IN. IS REQUIRED WITHIN THE FIRESTOP SYSTEM.

WHEN PVC OR CPVC PIPE IS USED T RATING IS 2 HR. WHEN PB PIPE IS USED T RATING IS 1-1/4 HR.

4. FILL, VOID OR CAVITY MATERIAL\* - SEALANT - MIN. 5 IN. THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF WALL.

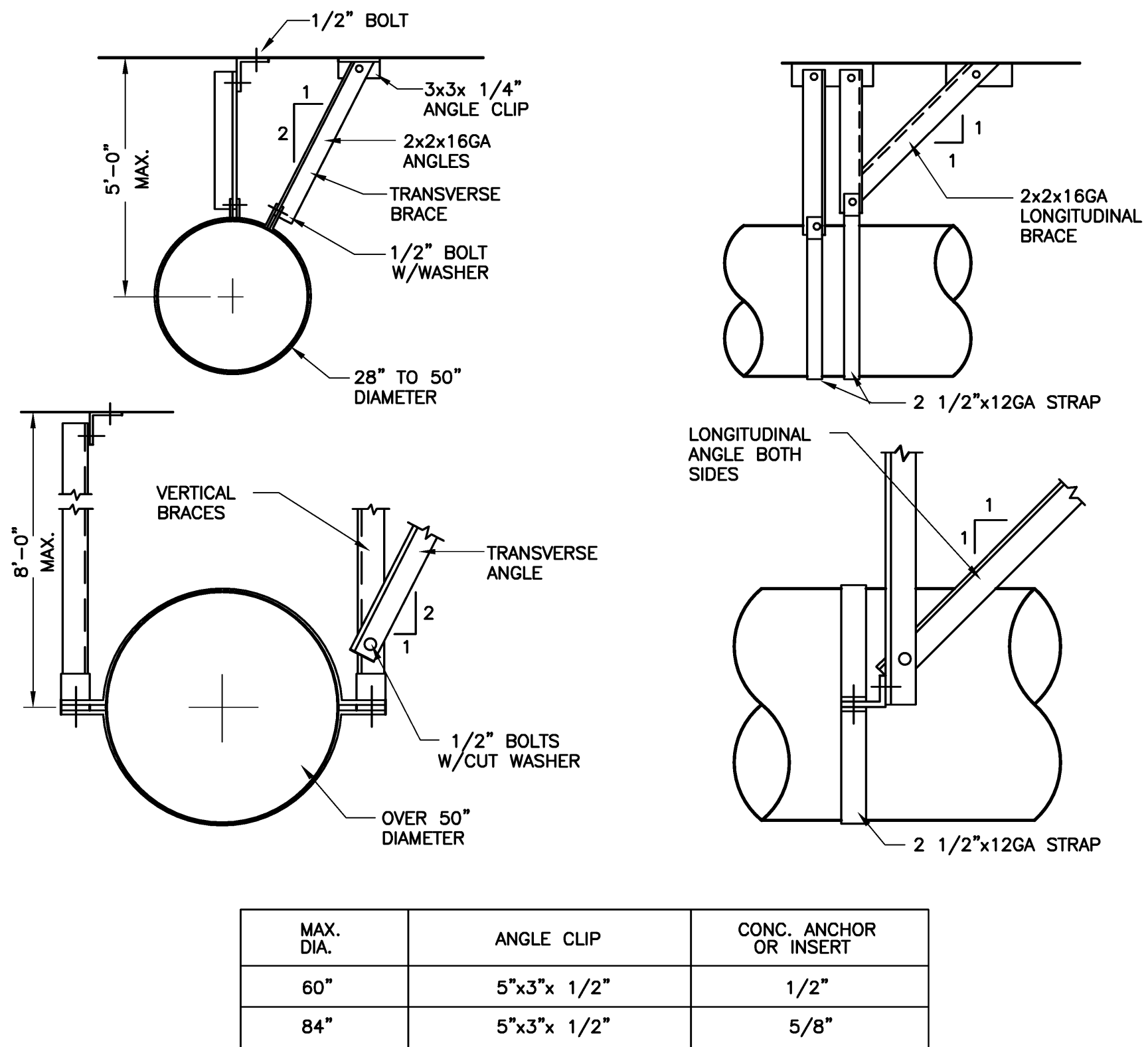
HILTI CONSTRUCTION CHEMICAL, DIV. OF

HILTI INC. – FS-ONE SEALANT

\* BEARING THE UL CLASSIFICATION MARK

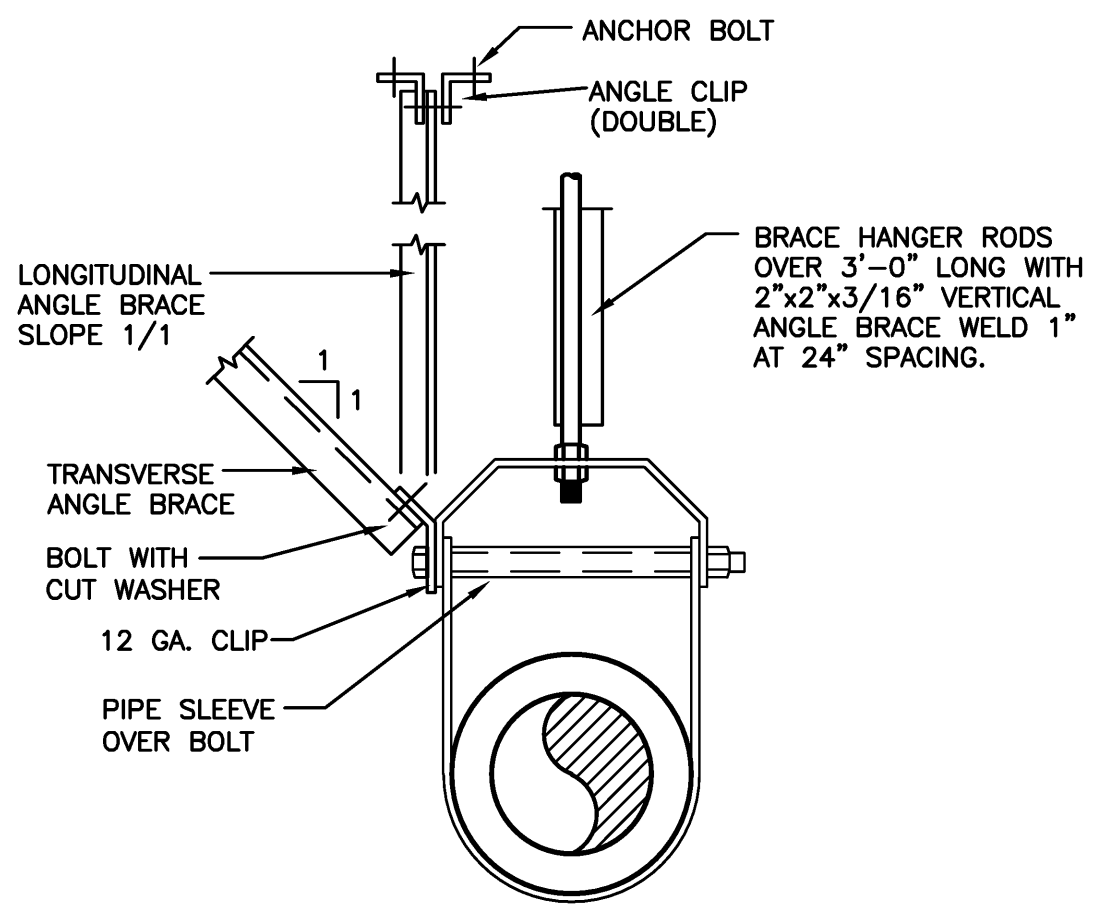
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## 2 TYPICAL SEISMIC BRACING FOR ROUND DUCT

NOT TO SCALE

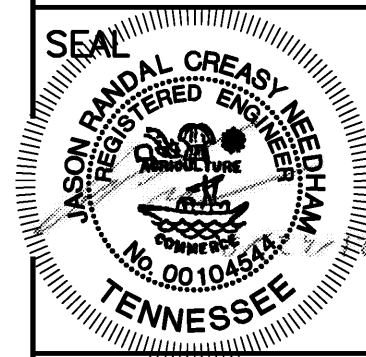


*ANGLE BRACE	BOLT TO ANGLE	ANGLE CLIP
2"x2" 16GA	3/8	3"x3"x 1/4
2 1/2x2 1/2 16GA	3/8	3"x3"x 1/4
2 1/2x2 1/2 16GA	1/2	5"x3"x 1/2
3"x3" 12GA	5/8	2-5x3x 1/2
3"x3" 12GA	3/4	2-5x3x 1/2

\*1-5/8x1-5/8 GA CHANNEL MAY BE USED.

## TYPICAL SEISMIC BRACING FOR PIPE

NOT TO SCALE



REVISIONS:

DATE:  
AUGUST 28, 2012

DRAWN BY:

SHEET TITLE:

## DETAILS – MECHANICAL

SHEET NO:

## M2.3